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(PCT Article 36 and Rule 70)

Form PCT/IPEA/409 (cover sheet) (April 2005)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/CA2005/000359

Box No. I Basis of the report

1. With regard to the **language**, this report is based on:
 - ☒ the international application in the language in which it was filed
 - ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of:
 - ☐ international search (Rules 12.3(a) and 23.1(b))
 - ☐ publication of the international application (Rule 12.4(a))
 - ☐ international preliminary examination (Rules 55.2(a) and/or 55.3(a))
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
 - ☐ the international application as originally filed/furnished
 - ☒ the description:
 - ☒ pages 1-5 as originally filed/furnished
 - ☒ pages* _____ received by this Authority on _____
 - ☐ pages* _____ received by this Authority on _____
 - ☒ the claims:
 - ☐ pages _____ as originally filed/furnished
 - ☒ pages* 6 as amended (together with any statement) under Article 19
 - ☐ pages* _____ received by this Authority on _____
 - ☐ pages* _____ received by this Authority on _____
 - ☒ the drawings:
 - ☒ pages 1 as originally filed/furnished
 - ☒ pages* 2 received by this Authority on 10 May 2006 (10-05-2006)
 - ☐ pages* _____ received by this Authority on _____
 - ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
 - ☐ the description, pages _____
 - ☐ the claims, Nos. _____
 - ☐ the drawings, sheets/figs _____
 - ☐ the sequence listing (*specify*): _____
 - ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-3</u>	YES
	Claims	<u>none</u>	NO
Inventive step (IS)	Claims	<u>1-3</u>	YES
	Claims	<u>none</u>	NO
Industrial applicability (IA)	Claims	<u>1-3</u>	YES
	Claims	<u>none</u>	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following document:

D1: US 6,167,692 B1 (GENERAL ELECTRIC CO.) 02 January 2001 (02-01-2001)

Novelty and Inventive Step

Claims 1-3 do meet the requirements of PCT Articles 33(2) and 33(3). Document D1, considered the closest prior art, discloses a fuel gas expander system in a gas distribution system of a power plant. The distribution system comprises a high pressure natural gas source being channelled in a primary turbo-expander, said primary expander driving a generator designed for various purposes (electrical, mechanical, etc...). D1 further discloses an intermediate turbo-expander further expanding a portion of said fuel gas expanded in said primary expander wherein each of said expanders have heat exchangers located upstream of them for pre-heating the fuel gas prior to expansion. D1 does not disclose alone, or in combination with any other document, the above fuel gas expander system further including a heat exchanger located downstream of said primary expander for extracting cold temperature for use in one of refrigeration or air conditioning.

Industrial Applicability

Claims 1-3 do meet the requirements of PCT Article 33(4).

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The description does not comply with PCT Article 5. The expression "there potentially could be a net energy gain, as opposed to a net energy loss..." is a misleading concept with respect to the theory of conservation of energy and perpetual motion.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE
PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

- 5 1. A method of generating power from a pressure control station of a natural gas distribution system, comprising the steps of:
- channelling natural gas entering the pressure control station into a turbine (52) which is powered by expansion of the natural gas as the pressure of the natural gas is reduced; and capturing the output of the turbine (52) for application for useful purposes;
- 10 channelling natural gas exiting the turbine (52) through a first heat exchanger (56) to extract cold temperature, accompanying the reduction in pressure, from the natural gas for use in one of refrigeration or air conditioning.
- 15 2. The method as defined in Claim 1, the turbine (52) being used to power an electrical generator (54).
- 20 3. The method as defined in Claim 1, using a portion of the natural gas to power a gas fuelled turbine power generator (58), passing the exhaust gases from the gas fuelled turbine power generator (58) through a first heat exchanger (66) to preheat a liquid and then passing the liquid through a second heat exchanger (78) to preheat the natural gas being channelled into the turbine (52) and capturing the output of the gas fuelled turbine power generator (58) for application for useful purposes.
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FIG. 2

